

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Jon Opsal et al.

Application No.: NEW

Filed: HEREWITH

For: REAL TIME ANALYSIS OF  
PERIODIC STRUCTURES ON  
SEMICONDUCTORS

Group Art Unit: Unknown

Examiner: Unknown

**INFORMATION DISCLOSURE  
STATEMENT**121 Spear Street, Suite 290  
San Francisco, CA 94105  
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M/S PATENT APPLICATION

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Applicant(s) submit(s) herewith patents, publications or other information [attached hereto and listed on the attached Form PTO-1449 (modified)] of which they are aware, which they believe(s) may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56.

This Information Disclosure Statement:

- (a) ☒ accompanies the new patent application submitted herewith. 37 CFR § 1.97(a).
- (b) ☐ is filed within three months after the filing date of the application or within three months after the date of entry of the national stage of a PCT application as set forth in 37 CFR § 1.491.
- (c) ☐ as far as is known to the undersigned, is filed before the mailing date of a first Office Action on the merits, or before a first office action after filing a Request for Continued Examination under §1.114.
- (d) ☐ is filed after the first office action and more than three months after the application's filing date or PCT national stage date of entry filing but, as far as is known to the undersigned, prior to the mailing date of either a final rejection or a

Atty Docket No.:

notice of allowance, whichever occurs first, and is accompanied by either the fee (\$180) set forth in 37 CFR § 1.17(p) or a certification as specified in 37 CFR § 1.97(e), as checked below.

- (e) ☐ is filed after the mailing date of either a final rejection or a notice of allowance, whichever occurred first, and the Issue Fee has not been paid, and is accompanied by the fee (\$130) set forth in 37 CFR § 1.17(i)(1) and a certification as specified in 37 CFR § 1.97(e), as checked below. This document is to be considered as a petition requesting consideration of the information disclosure statement.

[If either of boxes (d) or (e) is checked above, the following "certification" under 37 CFR § 1.97(e) may need to be completed.] The undersigned certifies that:

- (f) ☐ Each item of information contained in the information disclosure statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.
- (g) ☐ No item of information contained in this information disclosure statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 CFR § 1.56(c) more than three months prior to the filing of this information disclosure statement.

A list of the patent(s) or publication(s) is set forth on the attached Form PTO-1449 (Modified).

A copy of the items on PTO-1449 (Modified) is supplied herewith, except as noted below.

Those patent(s) or publication(s) which are marked with an asterisk (\*) in the attached form PTO-1449 (Modified) are not supplied because they are (a) either U.S. Patents and this an application filed after June 30, 2003, or (b) were previously cited by or submitted to the Office in a prior application no. 09/906,290, filed July 16, 2001, and relied upon in this application for an earlier filing date under 35 U.S.C. § 120.

A concise explanation of relevance of the items listed on form PTO-1449 (Modified) is:

- (k) ☒ not given
- (l) ☐ given for each listed item

- (m) ☐ given for only non-English language listed item(s) [Required]
- (n) ☐ is in the form of an English language copy of a Search Report from a foreign patent office, issued in a counterpart application, which refers to the relevant portions of the references [copy attached].

The Examiner is reminded that a "concise explanation of the relevance" of the submitted items "may be nothing more than identification of the particular figure or paragraph of the patent or publication which has some relation to the claimed invention," MPEP § 609.

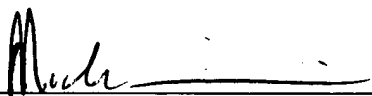
While the information and references disclosed in this Information Disclosure Statement may be "material" pursuant to 37 CFR § 1.56, it is not intended to constitute an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

In accordance with 37 CFR § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR § 1.56(a) exists. It is submitted that the Information Disclosure Statement is in compliance with 37 CFR § 1.98 and MPEP § 609 and the Examiner is respectfully requested to consider the listed references.

Respectfully submitted,

STALLMAN & POLLOCK LLP

Dated: December 11, 2003

By:   
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Attorneys for Applicant(s)

<b>INFORMATION DISCLOSURE CITATION</b> <i>(Use several sheets if necessary)</i>	<b>Docket Number (Optional)</b> <b>TWI-14120</b>	<b>Application Number</b> <b>NEW</b>
	<b>Applicant(s)</b> <b>Jon Opsal et al.</b>	
	<b>Filing Date</b> <b>HEREWITH</b>	<b>Group Art Unit</b> <b>Unknown</b>

#### U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	*AA	4,999,014	03/12/1991	Gold et al.	356	382	05/04/1989
	*AB	5,042,951	08/27/1991	Gold et al.	356	369	09/19/1989
	*AC	5,181,080	01/19/1993	Fanton et al.	356	381	12/23/1991
	*AD	5,357,632	10/18/1994	Pian et al.	709	105	08/08/1991
	*AE	5,412,473	05/02/1995	Rosencwaig et al.	356	351	07/16/1993
	*AF	5,596,411	01/21/1997	Fanton et al.	356	369	03/18/1996
	*AG	5,607,800	03/04/1997	Ziger	430	8	02/15/1995
	*AH	5,608,526	03/04/1997	Piwonka-Corle et al.	356	369	01/19/1995
	*AI	5,739,909	04/14/1998	Blayo et al.	356	369	10/10/1995
	*AJ	5,867,276	02/02/1999	McNeil et al.	356	445	03/07/1997
	*AK	5,889,593	03/30/1999	Bareket	356	445	02/26/1997
	*AM	5,963,329	10/05/1999	Conrad et al.	356	372	10/31/1997
	*AN	5,933,794	08/03/1999	Stalzer	702	123	02/25/1997
	*AO	6,256,097	07/03/2001	Wagner	356	369	01/07/2000
	*AP	6,429,943	08/06/2002	Opsal et al.	356	625	03/27/2001
	*AQ	6,465,265	10/15/2002	Opsal et al.	438	16	03/13/2001
	*AR	6,483,580	11/19/2002	Xu et al.	356	300	03/06/1998

#### FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	*AS	WO 99/02970	01/21/1999	PCT	G01N	21/21		
	*AT	WO 99/45340	09/10/1999	PCT	G01B	11/02		
	*AU	WO 02/23231 A2	03/21/2002	PCT	G02B	5/00		

#### OTHER DOCUMENTS

*(Including Author, Title, Date, Pertinent Pages, Etc.)*

	*AV	U.S. Patent Application No. 09/818,703, filed March 27, 2001, entitled "Critical Dimension Analysis with Simultaneous Multiple Angle of Incidence Measurements," by Jon Opsal et al., 26 pages of specification and 2 sheets of informal drawings.
	*AW	"Why create libraries? Now you can perform in real-time" advertisement, Therma-Wave, one page, no date.
	*AX	Opsal et al., "Fundamental solutions for real-time optical CD metrology," <i>Metrology, Inspection, and Process Control for Microlithography XVI, Proceedings of SPIE</i> , Vol. 4689 (2002), 4-7 March 2002, pp. 163-176.

<b>Examiner</b>	<b>Date Considered</b>
<b>Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</b>	